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Narrative Review of Health Misinformation in Social Media

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ABSTRACT

The proliferation of health misinformation on social media platforms poses a critical threat to global public health. This narrative review explores the scope, characteristics, mechanisms, and impacts of health misinformation disseminated through major social media platforms between 2000 and 2023. Drawing from peer-reviewed studies, the review identifies the structural, psychological, and sociocultural factors that facilitate misinformation diffusion and examines the role of algorithmic amplification, echo chambers, and influencer-driven narratives in shaping public perceptions. Health misinformation spans a broad range of topics including vaccines, infectious diseases, nutrition, and therapeutic interventions and often exploits emotional engagement, distrust in institutions, and politicized discourse to achieve virality. The review highlights key mechanisms of spread, such as manipulation of narratives, exploitation of algorithmic incentives, and coordinated campaigns by misinformation actors. It also discusses the profound implications for individual health decisions, collective behavior, and public trust in science. While platform-level interventions (e.g., fact-checking, labelling, and content moderation) and public health communication strategies show promise, their overall effectiveness remains limited by inconsistent implementation and contextual variability. The study concludes that combating health misinformation requires an integrated, multi-stakeholder approach that strengthens health literacy, ethical platform governance, and collaborative risk communication across global, national, and community levels.

Keywords: Health Misinformation; Social Media; Public Health Communication; Algorithmic Amplification; and Health Literacy.

INTRODUCTION

The pervasive spread of misinformation in the era of digital communication, particularly on social media platforms, has given prominence to the term "infodemic." Health misinformation, a key element of this phenomenon, can influence public behaviour and attitudes and impede compliance with health directives, thereby threatening the health of both individuals and populations [3]. Although the emergence of COVID-19 has amplified the spread of health misinformation on social media, the phenomenon predates the pandemic; hence the broader scope. Instead of examining information dissemination related solely to COVID-19, therefore, this review studies health misinformation intentional or unintentional dissemination of inaccurate or misleading information that applies to a range of health topics. Misinformation that merely expresses the illness experience of individuals or that helps vulnerable populations without adverse health consequences is excluded [1]. Moreover, the review investigates the manipulation tactics employed to challenge health myths on social media. Inaccurate health content constitutes the main form of health misinformation. "Content" refers to the expressed information rather than any social media text or visual factors. Health-promoting content that is deemed incorrect according to official health sources such as rehabilitation technology, health-boosting equipment, miracle cures, and COVID-19 vaccines is also classified as misinformation [3]. The examination is confined to research published in English-language peer-reviewed journals between the years 2000 and 2023[5]. Addressing this research gap, the present review seeks to enhance understanding of health misinformation on social media. It identifies the types and characteristics of

health misinformation circulating on social media, thereby contributing to discussions about the prevention and regulation of health misinformation among scholars, practitioners, and policymakers [2].

Conceptual Framework and Definitions

The growing prevalence of health-related misinformation on social media platforms is a significant concern for public health authorities [1]. To ensure that the analysis of misinformation aligns with related research, it is necessary to clearly define health misinformation and its spread. Misinformation refers to false or misleading information that is spread without the intention to deceive [5]. Misinformation spread designates the process of transmitting such information, which can occur through activities such as challenging myths, endorsing associated remedies, or disseminating manipulated content like images and videos [6]. Each of these activities contributes to the diffusion of misinformation and will be examined in the following sections [4]. In addition to defining misinformation and its spread, several other concepts merit consideration. Health misinformation denotes false or misleading information related to health, including but not limited to medical treatments, personal health practices, and public health policies [1]. Health literacy signifies individuals' capacities to obtain, process, and understand health-related information. An extensive range of topics encompasses health literacy, such as the evaluation of health-related information on social media platforms. Narrative reviews in public health and social media contexts commonly focus on interventions aimed at curbing the spread of misinformation [5]. Public health interventions, whether direct or indirect, extend to personal health practices; challenging misleading claims, thereby countering misperceptions and unsubstantiated remedies, constitutes a pivotal intervention. On social media, individuals frequently share manipulated content including doctored images, altered audio or video sequences, and fake documents to garner attention and provoke emotive reactions from the audience [7].

The Landscape of Health Misinformation on Social Media

Health misinformation refers to information related to health that is false, inaccurate, or misleading, and it spreads rapidly through social media, exacerbating negative impacts on individual and public health [3]. The features of social media, including incentives for engagement and algorithmic suggestions for content consumption, reinforce the sharing of emotionally charged and potentially false information while creating echo chambers that promote further dissemination. General health-related misinformation is widespread, encompassing topics such as vaccine safety, tobacco use, and drug efficacy, and has a documented negative impact on attitudes, behaviours, and health outcomes [3]. The dissemination of COVID-19 vaccine misinformation is associated with increased vaccine hesitancy and lower vaccination rates, and a randomized trial confirmed that exposure to misinformation reduces the likelihood of intending to get vaccinated. Surveys indicate that many adults in the United States consider health-related information encountered on social media to be often false or inaccurate [2, 3]. Potentially misleading health information appears to circulate on social media within widely shared narratives that can serve as the vehicle for misinformation. These narratives typically involve specific themes, particular health-related claims, or both. During the COVID-19 pandemic, pervasive misinformation emerged around vaccination, therapeutic agents, preventive measures, and the origins of the virus; across social media platforms, safety-related vaccine claims, miracle cure assertions, and conspiracy allegations were among the vaccine-focused narratives most commonly observed [4]. Certain structural mechanisms facilitate the spread and amplification of health misinformation via social media. Algorithms that recommend content based on prior engagement and popular posts, providing incentives to generate attention-grabbing material, encourage misleading or exaggerated claims. Echo chambers that form through algorithmic filtering, audience targeting, and common affinities support the rapid localised diffusion of health-related misinformation through niche communities [7]. Engagement metrics that reward likes, replies, and shares elevate considerable amounts of invalidated health content, and messages containing dangerous, dubious, or unfounded health-related claims often achieve disproportionate reach [11]. Influencers who possess established audiences can effectuate widespread dissemination of health misinformation, and content featuring messaging that challenges established public health guidance, such as COVID-19 vaccine recommendations, appears to receive greater attention than consensus or precautionary communications [8].

Prevalent Narratives and Themes

Emerging from multifaceted references to health issues, widely shared narratives (falsely claiming COVID-19 as a hoax, alternative cures like bleach or ivermectin, etc.) constructed by misinformation actors shape public response to health outreach[5]. Social media strengthens narrative diffusion, enabling platforms and influential users to catalyse "misinfodemics" on health topics like hydroxychloroquine, vaccine safety, or HIV/AIDS 5. As narratives intertwine with misinformation, mainstream platforms likewise witness a rise in narrative-driven health disinformation [4]. Health misinformation spreads through embedded narration that offers audiences a straightforward storyline [6]. Campaigns targeting scientific consensus on vaccine safety depict institutions as corrupted by industry profit, a theme echoed in conspiracy circles or antifluoridation rhetoric. Well-defined actors

(e.g., politicians, "Big Pharma") drive the plotline further, marrying personal anecdotes with broader societal contexts to present misinformation as an established fact, position the challenger as a protagonist against an apparent villain, and engage the public in collective action against the perceived threat [3].

Mechanisms of Spread and Amplification

The proliferation of health misinformation on social media results from coordinated efforts and unintended consequences of established platform features [7]. Social media algorithms seek to enhance user engagement, often prioritizing content evoking strong emotions [3]. Health-related misinformation, spanning myth-busting claims, alternative cures, and conspiracy theories, amplifies engagement far more than factual assertions. Accounts affiliated with health misinformation typically possess fewer followers or checkmarks than trusted sources but attain greater reach and virality due to algorithmic amplification [6]. Users tend to share misinformation from accounts with lower perceived credibility than their own but propagate elevated-volume narratives that signal heightened trust in the source [5]. Misinformation content featuring emotional or comparative language, cohesive narratives, and user engagement metrics attracts further amplification. Responses to misinformation, particularly likes and shares, reinforce these signals, establishing feedback loops that deepen narrative entrenchment. Social media algorithms further reinforce persistence via echo chambers and homophily, amplifying misinformation among already sympathetic audiences [1].

Methodological Approaches to Narrative Review

Misinformation constitutes an intrinsic aspect of the integrity of health communication on social media, jeopardising public trust in trusted health sources such as the World Health Organization [7]. Critically, the pervasiveness of health misinformation has intensified during the COVID-19 pandemic, as misinformation continues to proliferate across various social media channels [9]. Although systematic reviews that aimed to explore how health-related misinformation diffuses on social media platforms have been published, they fall short of the broader interpretative approach of narrative reviews [7]. Accordingly, analysing a diverse spectrum of peer-reviewed quantitative and qualitative studies on the nature, dynamics, mechanisms, and impacts of health-related misinformation on social media constitutes a vital first step for effective interventions [12]. Misinformation that contests scientifically established facts or public health recommendations is termed health misinformation, whereas misinformation dissemination is characterised as the unintentional sharing of false, misleading, or inaccurate health information [1]. Various sources that either present a coherent representation of health-related misinformation on social media or examine specific facets of health-related misinformation on different social media platforms or during particular events qualify for inclusion [8].

Literature Search and Inclusion Criteria

Social media has transformed information sharing in the health domain, facilitating both beneficial exchanges and the spread of misinformation [5]. In the COVID-19 pandemic, giant platforms have been pivotal for institutional updates but remain primary venues for falsehoods about the virus, protection strategies, and treatments. Government agencies, health professionals, and international organizations acknowledge a significant rise in health-related misinformation [1]. This briefing focuses on the semantic field of health misinformation, particularly on social media platforms like Facebook, Twitter, TikTok, WhatsApp, Instagram, and YouTube [4]. Health misinformation encompasses manifold falsities [4]. Social media allows easy distribution of these myths by amplifying audience attention and engagement, leading to broad policy implications. Nine research questions outline the scope of this review, guiding the analysis of reported health misinformation dissemination and exposure on these platforms within the past two years [7]. A structured literature search enabled a narrative review of health-related misinformation on social media platforms [4]. Research published from December 1, 2020, to November 30, 2022, was systematically identified through the Scopus, PubMed, and Web of Science databases. Title, abstract, and keywords were searched for terms such as "health misinformation," "misinformation spread," "social media," "dissemination," and "platform." The study encompasses a variety of social media and professional networking platforms, including Facebook, Twitter, WhatsApp, TikTok, Instagram, YouTube, LinkedIn, and Telegram [5].

Data Extraction and Synthesis

Health misinformation on social media is a model of the digital epidemic. It can emerge in any locale, reminiscent of a forest fire igniting at multiple points under a predisposing climate and fuel [1]. On social media, the narrative is often fabricated or altered content, sometimes supported by links to conventional news sources, widely propagated through public pages, moderation-free newsfeeds, and algorithmic recommendations [3]. Health misinformation is an undesirable model of such dissemination, as it may engender harm to large portions of the population [6]. Just as emerging infections gradually infect more hosts or clonal outbreaks devastatingly pervade entire regions, health misinformation can spread through multiple channels and remains connected by cliques of

influencers or popular pages [7]. Health-related information circulating in online social settings can be tracked through a variety of approaches. Stakeholders such as practitioners, educators, and policymakers need to observe the nature and prevalence of spatial, temporal, and content distribution across a representative selection of domains [4]. Yet, scholarly attention remains sporadic, scattered, and diffuse, generating an impression that community input would be redundant [3]. Systematic reviews may not be feasible, as raw content is dispersed across multiple channels. In lieu of an ideal methodology, the current work undertakes a narrative review, presenting a relevant synthesis of community concerns and perspective on an appropriate route for systematic study [8]. Source material is inspected for the nature of the health-related content, sewage, volume of misinformation, ease of tapping into such information, and associated components [5]. Three related questions guide the inquiry. What types of health misinformation proliferate on social media? How do practitioners influence and operate around such narratives? What overarching themes accompany misleading health claims?

Quality Appraisal of Sources

Misleading health claims on social media can derive from formal, scientific sources as well as informal, user-generated posts [2]. A narrative review of messaging about vaccines published during the COVID-19 pandemic found that peer-reviewed articles disseminated through academic journals and preprint servers were common sources of misinformation [4]. Many of these contributions proposed novel hypotheses with insufficient methodological rigor or inadequate consideration of conflicting evidence, thus inviting critiques from both mainstream and fringe commentators[7]. Uncertainty regarding proper interpretations of the studies' findings further fueled the spread of misleading content. Articles that garnered considerable social media interest addressed themes such as vaccine safety, vaccination allocation, and masking. Some received comments from government officials or healthcare professionals affirming their scientific value, but such endorsements did not preclude the use of the findings to substantiate or dispute specific claims [4]. Accurate, relevant health information is critical during communicable disease outbreaks, and risk communication is integral to public health. Complexity in understanding health messages, caused by psychosocial constraints or perception of public numeracy and technical proficiency, can lead to resistance to otherwise useful information. Studying information dissemination through traditional and social media in relation to health claims concerning H1N1, Ebola, and measles revealed low-quality sources, alarmist tone, lack of sophistication, failure to counteract myths, and insensitivity to social capital [8]. At least one of these issues affected the communication of public health authorities and health professionals, who nevertheless were often perceived by audiences as more credible than contestants propagating (dis)information through traditional or social media. To remedy these deficiencies, improved clarity, content, and coordination of official messages are recommended [7]. A systematic review identified essential questions for clarifying how health-related misinformation spreads on social media. An important inquiry involved the credibility of sources and the characteristics that determine which messages gain traction in societies where many players propagate (dis)information. Individual assessments of misinformation believability depend on source, narrative, and context, and the likelihood of sharing is influenced by perceived credibility [1].

Impacts of Health Misinformation

Misinformation affects individual health behaviors and public health outcomes, yet its impacts remain poorly characterized and its relevance insufficiently acknowledged [3]. Health misinformation on social media adversely influences personal health behaviors, decision-making and collective outcomes, aggravating existing public health challenges and hindering mitigation efforts [1]. Despite documentation of substantial misinformation about topics such as vaccines and drugs, these public health implications have received less attention than outcomes such as risk perception and reluctance to consult health professionals. Social media is pivotal in propagating misinformation, amplifying messages and fostering echo chambers through algorithmic reinforcement and engagement metrics [6]. Health misinformation propagated via social media not only impacts patient health decisions and behaviors but also amplifies large-scale social issues. Concern over the emergence of a misinformed public threatens the credibility and authority of health communicators such as governments, expert authorities, educators, and healthcare providers [3].

Individual Health Outcomes

Misinformation and disinformation are prevalent on health and science topics across numerous public channels. The burden of misconstrued, inaccurate, and deceptive information on health issues, as well as public perceptions of misinformation, is considerable on social media platforms [4]. Between 2016 and 2018, health misinformation on two widely utilized social media platforms was disseminated to the public on a more frequent basis than accurate health information [5]. Content addressing health issues, as identified by the account of origin rather than by reader engagement metrics, often constituted misinformation [8]. Greater exposure to harmful health misleading information in social media interactions influences a host of individual-level outcomes, as well as those

at the population level [3]. Effective interventions and approaches to mitigate the propagation of health misinformation are critical. Social media platforms have emerged as an important source of credible and timely health information [7]. Nonetheless, alongside a wide array of correct or accurate health information, misleading and erroneous content related to health continues to circulate [5]. Thus, approaches that facilitate both the dissemination of accurate health information and the limitation of the visibility of harmful, misleading, or inaccurate health misinformation warrant careful consideration [4]. Policy and other interventions aimed at reducing exposure to health misinformation on social media platforms and other information sources are of significance to at-risk population groups, potentially assisting in curbing misinformation encounters even in the absence of individual knowledge or awareness of misinformation or misinformation spread [8].

Public Health Implications

Health-related misinformation (hereafter "health misinformation") represents an urgent public health issue with widespread implications [1]. On an individual level, exposure to health misinformation can lead to negative health decisions, increased risk-taking, and a false sense of security [1]. Misinformation dissemination has also been associated with decreased trust in health professionals and institutions, along with hesitancy towards vaccination and treatment. The impact of misinformation extends beyond individual-level health choices. Misinformation increases the burden on healthcare providers by creating unnecessary and unresolvable patient concerns, thereby diverting resources from individuals needing legitimate care [3]. In a broad public health context, misinformation compromises response efforts to widespread health threats by undermining the collective effort necessary for successful mitigation [7]. Overall, the presence of health misinformation has serious repercussions for public welfare, access to care, resource allocation, and effective health systems. Health misinformation spreads when individuals receive incomplete or contextually altered information, causing them to misinterpret the origin, intent, and relevance of that information [5]. Socioeconomic, contextual, or demographic factors can all amplify health misinformation [7]. Governmental institutions and public health officials have proposed a variety of remedial approaches appropriate for different platforms and settings, including public narratives and direct detection [2].

Moderating Factors and Contextual Variability

The prevalence of health misinformation on social media presents unique challenges to public health, particularly during crises such as the COVID-19 pandemic [1]. Nevertheless, exposure to misinformation and related factors has been found to vary across demographic groups, geographic locations, and social-media platforms [3]. Content moderation both informal and formal has emerged as one approach to addressing these challenges, although the effectiveness of different moderation strategies remains uncertain [9]. Furthermore, the dissemination and reception of health misinformation are influenced not only by features of the misinformation itself but also by the broader sociocultural, political, and historical context in which users engage with health-related information [4].

Platform-Level Interventions

Health misinformation spreads rapidly on social media, yet interventions vary substantially across platforms, enabling comparisons of policy changes to curb misinformation and their efficacy in different contexts [7]. Facebook's integration of fact-checking organizations led to the systematic suppression of falsehoods, paired with the removal of high-reach content promoting conspiracy theories and miracle cures; these changes successfully reduced the interaction rate of misinformation [6]. Twitter adopted a different strategy, supplying users with links to reputable sources, thus empowering individuals to correct their own beliefs; no aggregate decrease in the spread of health-related falsehoods followed [6]. Consequently, the platform's own algorithm prioritizing sensational content [1], together with emerging misinformation on the pandemic and vaccination, facilitated a resurgence of harmful claims. Both platforms adjoined contextual indicators to posts linking to disputed content [1]. Parler, a competing site that banned moderation, prospered amid the pandemic, and the dramatic rise of its far-right, conspiratorial ties after the 2020 presidential election substantiates the political events as drivers of misinformation [10]. TikTok implemented warnings on videos flagged by fact-checkers, but the bulk of health-related clips remained unfiltered, and the particular episode of highly contested analyses on vaccines received little attention, underscoring the inaction of governing and the limitations of the campaign, as claims persisted [2].

User-Level Factors

Health misinformation pervades social media, with profound consequences for individual and public well-being. Individual users contribute to this dissemination and collectively interpret such misinformation [1]. User-level factors including sociodemographics, health literacy, and motivational influences impact the likelihood of encountering health-related misinformation [5]. Healthy individuals with substantive health knowledge often seek out information online to complement their existing understanding, leading them to consume extensive false health material, even if it contradicts their views [3]. Social media users regard health misinformation as extremely prevalent and perceive it as highly difficult to navigate; these perceptions correlate strongly with

sociodemographic traits and active health-sharing behaviours. According to self-report measures, age, education, and self-rated health status exert substantial influence on perceptions of health misinformation prevalence and discernibility [4]. Older respondents and those with lower educational attainment consistently express awareness of greater misinformation availability and more significant difficulty distinguishing true from false content [2]. A government-sponsored social influence campaign during the COVID-19 pandemic further demonstrates the role of external motivation-driven adaptations to information-sharing networks based on educational level and frequency of social media usage [5].

Sociopolitical and Cultural Contexts

Sociopolitical and cultural influences impact the spread of health misinformation on social media [9]. They shape the topics, narratives, and formats of misinformation content, as well as the motives and perspectives of misinformers. Sociocultural factors influence the willingness of users to engage with and share misleading content [8]. Sociopolitical issues, motivations, and ideologies are closely connected to the COVID-19 pandemic, yet they remain less prominent in the literature compared to other factors. A large body of research focuses on specific platforms, often overlooking their diverse formats and affordances [7]. For instance, Instagram is not limited to image-sharing; it also supports short videos, stories, blogs, and reels. These affordances enable various types of health misinformation that may not occur on platforms devoted exclusively to text. Narratives, themes, and formats are likely to differ across platforms, warranting further investigation [3]. The discourse surrounding COVID-19 misinformation unfolds within complex political, social, economic, historical, and cultural contexts. Theoretical models of misinformation diffusion often neglect systems-level influences, leaving an important gap in understanding how societal challenges shape the population-level dynamics of misinformation spread and mitigation [4].

Intervention Strategies and Evidence

The public health campaigns that have been proposed to counter health misinformation focus on risk communication, health literacy, and debunking [11]. These activities have been described in the literature as communication research, health education, and scholarship of teaching and learning but are pursued under a broad framework of health communication [12]. Health communication activities, particularly in such platforms as Facebook and Twitter, are one option for reducing health misinformation [4]. Information campaigns can be based on a set of health literacy principles such as promoting health literacy awareness and encouraging verification of claims 10. Educators have also been encouraged to engage in critical analysis of health misinformation to promote understanding of how and why health misinformation is widely shared. An understanding of audience perceived intent and context influences the effects of misinformation on individuals [5]. Health organizations that are credible voices for public health have also been cited as information sources that might reduce misinformation on the topic [7]. Well-established authorities might be differentially effective based on societal trust. Platform governance is a critical activity given the wide-ranging impacts that health misinformation can have, particularly during a pandemic [8]. The rapid dissemination, virality, and ability of misinformation to reach broad populations through limited contact has led to multifaceted strategies for addressing misinformation. Governance includes the establishment of platform policies to minimize misinformation. Governance policies include information governance frameworks, governance structure and decision-making, community standards, and transparency in moderation processes and decision-making [5].

Risk Communication and Health Literacy

Humans disseminate formal and informal information about public health through various channels. Robust social fabric inevitably encases this health data in diverse messenger formats, removing it from its original context. Introduction of sophisticated technology and information systems make fast distribution and equal access effortless [9]. In combination with broad human curiosity, eagerness for health edge, and the ever-changing disease environment, many widely accepted health beliefs e.g., node 13 describe beta blockers, node 17 describe fluoride have turned into health myths [8]. Popular belief stresses that ubiquitous health information appears over masses, but it is not the case. Scientific discoveries occupy sizeable volume of official reporting; percolation into health channels attracts little public appeal, and quick processing through conveyor belts clips the beauty and splendour of hard-won results [7]. Yet human health experiences of varied intensity faithfully deposit into multi-billion health literature-hours. Information exchange network permits rapid, low-cost, wide-coverage replay of and re-experience with first-hand health adventures [6]. Health myths lure inquisitives, while other documents enlighten on what health myths comprise and what reasoning frames constitute a tell-tale myth in health literature a worthy research undertaking of widespread social concern [3].

Platform Governance and Policy Measures

Health misinformation is a relevant worldwide issue causing health and socio-economic problems. Social media platforms, while increasing the volume and diversity of health information, inadvertently promote the spread of health misinformation [11]. This study finds that the spread of health misinformation on social media is motivated by personal, situational, and social factors that also moderate its effects [10]. Health misinformation refers to the statements people believe to be true regarding health, medicine, or wellness but which are unverified, outré, unconsented, or contrary to accepted knowledge [4]. Misinformation diffusion is the phenomenon in which health misinformation is shared through channels like direct messaging, comments, reposting, or dedicating an account to the subject. Governance strategies, policy measures, and systematic approaches are being increasingly introduced by major platforms [11]. Twitter and Facebook are implementing moves against health misinformation by labelling, fact-checking, and removing certain posts. TikTok disabled the ability to upload or stream lives when a health-related account receives a warning [8]. Youtube launches campaigns to promote official health-related contents [12]. Health misinformation on social media is targeted also in certain countries like Australia or South Korea. Vaccine-related misinformation is designated as a particular target by the UK government and the European Commission. All those efforts are intensified in the COVID-19 pandemic because the amount of health-related content and misinformation has increased [14].

Community and Healthcare Provider Roles

Online health misinformation also emanates from communities and institutions. Community members advocate for specific health practices that are often contrary to scientific evidence [13]. Community organizations amplify such voices and promote medically unsupported products and services. These influences can impede adherence to scientifically sound public health measures, such as recommended pre-exposure prophylaxis for HIV. The inclusion of community and institutional perspectives may facilitate the more effective dissemination of evidence-based health practices and mitigate the risk of misinformation spread in social media conversations [15]. Healthcare providers form a third important group in the fight against health misinformation [5]. Their clinical expertise and trustworthiness position them to challenge misleading claims [11]. Physicians and nurses, in particular, occupy a unique role within the health communication ecosystem. Social media serves as a convenient medium for these professionals to correct misinformation through established accounts with existing followers [10]. The urgency of addressing health-related topics has further incentivized such engagement. Many individuals actively seek guidance from healthcare providers when confronted with ambiguous health information. A broad understanding of the motivations, barriers, and strategies employed by healthcare professionals when addressing misinformation can significantly deepen insights into online health discourse [12].

Gaps in Knowledge and Future Research Directions

Social media facilitates the rapid evolution of health misinformation, but little attention has been paid to the underlying challenges [6]. Questions remain regarding definitions of health misinformation and misinformation spread; the role of health literacy; time span, platform coverage, and content type needed to investigate why misleading health claims are issued or amplified; and the distinction between these drivers and godpost narratives, common narrative themes in public discourse, or misinformation spread mechanisms [7]. Addressing these gaps would boost understanding of how and when incorrect health information appears on social media as new technologies and the associated dangers emerge, yet research remains limited [16-18].

CONCLUSION

Health misinformation on social media represents one of the most pressing challenges of the digital era. Its rapid and uncontrolled spread undermines public health efforts, fosters distrust in scientific institutions, and contributes to harmful individual and collective behaviors. The evidence reviewed demonstrates that misinformation thrives in environments that reward emotional engagement, political polarization, and sensational content conditions amplified by social media algorithms and influencer networks. The COVID-19 pandemic further exposed how easily misleading narratives can distort risk perception, erode compliance with health guidelines, and intensify global health disparities. Despite growing recognition of the problem, current interventions remain fragmented. Platform-level governance measures, such as content moderation, fact-checking, and misinformation labelling, have achieved limited success due to inconsistent application, technological loopholes, and cultural differences in message reception. Similarly, user-centered strategies such as promoting digital and health literacy are essential but insufficient without structural and policy-level reforms. Effective solutions must therefore integrate public health communication, social science, and technology governance to ensure accountability and resilience within the information ecosystem. Moving forward, the fight against health misinformation must prioritize three interlinked strategies: strengthening public trust through transparent, evidence-based communication;

empowering users with critical literacy and community-level interventions; and enforcing ethical, coordinated platform governance to detect, demote, and prevent harmful content circulation. Only by aligning these strategies can societies mitigate the risks of misinformation and safeguard the integrity of public health in an increasingly digital world.

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